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**Date:** 10/24/96 3:28pm  
**Subject:** Sauget Area 1 Background Information

Three documents attached: RDT briefing memo #1 (January 20, 1994)  
RDT briefing memo #2 (April 20, 1995)  
RDT summary from above mtg.

Some of the information in these documents is obsolete, but they do contain good background info about the Area 1 sites. Give me a call if you've got questions.

**BRIEFING MEMORANDUM - SAUGET AREA 1 SITES**  
**PROPOSED NPL SITE**  
**SAUGET AND CAHOKIA, ILLINOIS**

1/20/94

The purpose of this memorandum is to brief the Regional Decision Team on the background and current status of the Sauget Area 1 Sites. The Illinois Environmental Protection Agency (IEPA) has met with representatives of USEPA in regards to proposed immediate measures which need to be taken at these sites. This memorandum will provide a detailed description of these and other actions which must be considered at the Sauget Area 1 Sites.

**I. Background**

One of the most highly contaminated areas in Illinois are the Sauget Area 1 Sites. They comprise three hazardous waste disposal landfills, a formerly used waste impoundment, two abandoned gravel pits and five intermittent segments of Dead Creek. These sites had allegedly received hazardous materials/wastes from local industries that became established in this vicinity around the turn of the century. The primary disposal methods included direct industrial wastewater discharges into the five identified segments of Dead Creek, and controlled/uncontrolled disposal at the other six sites. The contaminants found at the Sauget Area 1 Sites consist mainly of chlorobenzenes, chlorophenols, chloroanilines, nitrophenols, nitroanilines, naphthalene, PCBs and PNAs. These sites were aggregated together on the basis of their relative proximity to each other, shared watershed, nearly identical contaminants, and a common property owner at many of the sites during the periods of disposal. Provided below is a brief description of each site:

**Site G**

A former surface/subsurface hazardous waste disposal site which was originally used as a gravel pit. Site G occupies about 4.5 acres and is littered with demolition debris, metal wastes and corroded drums. Oily and tar-like wastes are found mainly in areas where drums are present; however, most of the landfill is only partially covered with fly ash and cinders. IEPA estimates that there is

approximately 22,000 yd<sup>3</sup> of contaminated fill and about 60,000 yd<sup>3</sup> of saturated chemical waste materials. Surface soil sampling revealed PCBs (74,000ppm total), 1,4-dichlorobenzene (22,000ppm), PCP (21,000ppm), 4-nitrophenol (1000ppm), 2-nitroaniline (220ppm), and PNAs. The primary contaminants detected in subsurface soils included naphthalene (5,429ppm), PCP (4,769ppm) and 4-chloroaniline (231ppm). Access to the site is restricted by a chain-link fence installed by USEPA. Aerial photos show major disposal activities occurring at Site G from the early to mid-1950s to the mid-1960s, after which sporadic disposal occurred until it was fenced in 1982.

#### **Site H/I**

Both Site H and Site I are former gravel pits with only portions of Site I filled with chemical wastes. Site H is about 5 acres and is completely covered with fly ash and cinders while Site I, having the same cover materials and being completely covered, is approximately 55 acres. Aerial photos indicate that waste disposal at these sites began prior to 1937 and continued until the mid- to late-1950s. IEPA estimates the volume of fill material to be about 116,000 yd<sup>3</sup> and saturated chemical waste material about 250,000 yd<sup>3</sup>. Predominant contaminants found at Site H included dichlorobenzenes (50,242ppm total), 1,2,4-trichlorobenzene (7,581ppm), naphthalene (2,265ppm), 4-nitroaniline (1,834ppm), PCBs (1,800ppm) and PNAs. Site I had similar contaminants but at lower concentrations with the exception of 1,2,4-trichlorobenzene (8,225ppm) and cyanide (3,183ppm). Access to Site H is completely unrestricted, however waste materials are not present at the surface as they are at Site G. Access at Site I is restricted by a chain-link fence and a 24 hour guard at both entrances to the business which owns the site.

#### **Site L**

This site is the location of a former surface impoundment used by a local hazardous waste hauling firm. It is approximately 70 feet by 150 feet and about 8 feet deep. The site is mostly covered with cinders and access is not restricted. The main contaminants at Site L consist of PCBs (500ppm), 4-chloroaniline (270ppm) and PNAs.

#### **Site M**

Site M is a formerly used gravel pit that was excavated sometime in the 1940s. IEPA is not aware of any active waste disposal at this

site. However, given Site M's location near Dead Creek and the fact that the bottom elevation of the pit is lower than that of the creek, most of the contamination at this site can be attributed to creek sediment being passively transported from Dead Creek. The principle contaminants at Site M included PCBs (505ppm total) and dichlorobenzenes (66ppm total). The Monsanto Company has performed most of investigatory work at this site. Monsanto determined that the volume of sediment from Dead Creek migrating into Site M is on the order of 3,600 yd<sup>3</sup>. Access to this site is restricted by a chain-link fence installed by USEPA in 1982. The probability that persons could come into contact with PCB-contaminated sediments is low considering the contaminated sediment is always under water.

#### **Site N**

Another site located next to Dead Creek, Site N was a 10-foot deep excavation owned and operated by a construction company. The site was evidently used for the disposal of construction and demolition debris. Two soil borings have shown PNA contamination, however the main group of chemicals found at other Area 1 sites were not found at Site N. Access at Site N is restricted by a chain-link fence.

#### **Dead Creek Segment A**

Located next to Site I, this portion of Dead Creek is owned by Cerro Copper Products, Inc. As the culvert at the south end of Dead Creek Segment A (CS-A) had been blocked, this site behaved as an impoundment. It was used as a surcharge basin for the Village of Sauget sewer system during storm events. Given that most of the users in the system were industries, this site received a large volume of industrial process wastewater. Many of the contaminants found at this site were of the same nature as those found at other Sauget Area 1 Sites. As part of a consent decree with the State of Illinois, Cerro Copper agreed to remove approximately 25,000 yd<sup>3</sup> of contaminated creek sediment from CS-A in 1990 at the cost of over \$13.6 million. Work was performed under IEPA oversight and CS-A was backfilled and regraded after the removal was complete. A vapor barrier was placed beneath the final regrade to inhibit volatilized compounds coming from groundwater flowing through Site I.

#### **Dead Creek Segment B**

As in the case with the above site, the culvert at the south end of Dead Creek Segment B (CS-B) was sealed, also causing this site to

behave as an impoundment. CS-B received the same wastewater flows from the Sauget industries prior to the sealing of the culvert at the south end of CS-A. CS-B also received direct wastewater flows from a rubber recycling operation, the hazardous waste hauling firm that operated at Site L and from overflows from Site L when it was in use. CS-B also receives surface runoff from Site G. The main contaminants found in sediments at this site include PCBs (546ppm total), dichlorobenzenes (237ppm total) and minor amounts of PNAs, naphthalene and chlorobenzenes. Access to this site was restricted by a chain-link fence installed by USEPA. Additional sediment sampling by the Monsanto Company has further verified that creek sediments have been impacted by PCBs. Sampling by IEPA has shown that surface water in CS-B is affected by contaminants from Site G.

#### **Dead Creek Segments C, D, E**

These segments of Dead Creek received the same industrial flows from the Sauget industries and sources mentioned above prior to the culverts being blocked at CS-A and CS-B. Because these blocking actions had occurred long ago, many of the contaminants which IEPA suspects should be present have since volatilized. Presently, the main contaminants of concern in these creek segments are PCBs. Very limited sampling has revealed total PCB concentrations of up to 60ppm. These segments of Dead Creek run through residential areas of Cahokia and access to them is completely unrestricted.

Work by IEPA to determine the magnitude and extent of contamination at all of these sites has been ongoing since 1980. Funding for these investigations was provided by state funds at the cost of over \$1.3 million. To date, these actions represent the State of Illinois' most costliest efforts to enter any site onto the NPL.

#### **II. Current Status**

IEPA is not aware of recent disposal activities at any of the Sauget Area 1 Sites. Currently, the most significant problem associated with these sites is the flooding at Dead Creek and high water table conditions that remain. Prolonged precipitation events within the Mississippi River floodplain have caused the water table at the Sauget Area 1 Sites to rise within three feet of the ground surface, and in many cases above the ground surface. After heavy periods of rainfall, Dead Creek's capacity to absorb stormwater is greatly decreased. As the culvert at the south end of CS-B has

been sealed, flooding has occurred on Judith Avenue (south of CS-B) and has backed up to Queeny Avenue (north of CS-B) thereby creating serious community concerns. As surface water rises in the CS-B "impoundment", it comes into contact with surficial contamination at Site G. It is clear that Site G is affecting surface water quality in the creek (e.g., significant levels of phenol, chlorobenzenes, chlorophenols, and chloroaniline). Furthermore, these contaminant levels in surface water have been increasing to the point that they are now above the State of Illinois' water quality standards.

IEPA is intent on placing the Sauget Area 1 Sites on the NPL. Comments on the draft scoring package had been sent to USEPA on December 1, 1993. We anticipate that the scoring package can be finalized shortly so that these sites are eligible for the Spring of 1994 proposed listing update.

### **III. Proposed Immediate Measures**

IEPA has reviewed all available data relative to the Sauget Area 1 Sites. Our recommendations on immediate measures are listed below:

1. Repair or fortify the fences that were installed around Site G, CS-B and Site M to minimize the risk of persons coming into contact with these sites. There is an access point to the southern portion of CS-B that needs to be blocked.
2. Perform additional air sampling at Site G to better characterize airborne contaminants leaving the site. If the sampling indicates potential exposures that could lead to acute health problems, the feasibility of a surface removal/capping action at this site will be evaluated.
3. Fully characterize the extent of contamination in the unfenced portions of Dead Creek (CS-C, CS-D, CS-E). As very limited data suggest, known concentrations of PCBs (60ppm total), while significant, would not be expected to result in acute health problems for children playing in creek sediments. IEPA recommends that fencing be constructed around creek segments showing PCB concentrations that could cause acute health problems if full-scale remedial activities (e.g., removal actions) are not expected to be completed within the next few years.

4. Eliminate the flooding at CS-B. IEPA proposes that this segment of Dead Creek be pumped out so that the water level in CS-B does not rise to the extent that it comes into contact with Site G. Recent field observations have indicated that waters within CS-B have been impacted by Site G and that these waters are migrating outside of fenced areas into neighborhoods. IEPA's interpretation of the surface water sample results suggest that while there are no acute health effects associated with a possible brief dermal exposure to surface water flooding from CS-B, there will likely be ecological effects as the contaminant levels are above state water quality standards. IEPA proposes (since contaminant levels are above water quality standards) that the water be pumped to the nearby wastewater treatment plant for treatment. As these flooding problems are likely to prevail through 1994, this pumping action could possibly be a long-term project.

5. IEPA has already identified approximately 30 potential PRPs at the Sauget Area 1 Sites in a past enforcement action. The goal of this action was to solicit a settlement for local industries to perform a Sauget Area 1 RI/FS without having to resort to naming the site to the NPL. Viable parties are among these potential PRPs. A thorough PRP search must be performed and additional information needs to be obtained from further Section 104(e) Information Requests to these and other potential PRPs. In addition to this PRP information, IEPA also has limited information on waste disposal activities at these sites from interviews of longtime residents.

#### **IV. Recommended Measures**

IEPA recommends that a very strong enforcement approach be employed at the start of the project. We would anticipate that Section 104(e) Information Requests be sent (at minimum) to potential PRPs that IEPA had identified in the earlier state enforcement action. It is further recommended that the questions in the Request be more specifically worded than the questions that are in USEPA's model 104(e) Request. IEPA anticipates that the first round of 104(e) Requests could be mailed out by mid-February, 1994.

While these and further rounds of Requests are being evaluated by the potential PRPs, a very thorough PRP search must be conducted. Information obtained in the PRP search and 104(e) Request responses will be used to build an enforcement case against identified PRPs.

Given that these activities may take as long as six months, we anticipate that negotiations with the PRPs could begin by August 15, 1994. A sixty day negotiation period with the PRPs would then take place after which a settlement will or will not be reached.

If a settlement with the PRPs cannot be reached by October 15, 1994, IEPA recommends that an RI be performed to supplement IEPA's existing site database. More specifically, the fieldwork in this

RI would entail performing confirmatory borings at each of the sites to complete a source area characterization, the investigatory work mentioned in III.2 and III.3, a groundwater study, a risk assessment and an ecological assessment. IEPA anticipates that the RI report could be completed by the end of 1995 at the cost of \$1.5 to \$2 million.

Because of extensive historical involvement IEPA believes that, at minimum, the RI should be performed as a state-lead action. In addition to having obtained most of the existing data at all Sauget Area 1 Sites, IEPA has developed extensive community relations contacts in Cahokia and has had reasonably good relations with many of the Sauget industries.

With respect to IEPA's earlier attempts to reach a settlement with the local PRPs for an RI/FS, it was very much apparent that documentation concerning disposal activities was lacking. Given this lack of documentation, the time period during which these activities existed, and the extreme unwillingness for these potential PRPs to cooperate, it is likely that the RI (and FS) will be performed as fund-lead actions. IEPA would be willing to accept the lead role in enforcement for the Sauget Area 1 Sites in order to reach a settlement with the PRPs.



**BRIEFING MEMORANDUM #2 - SAUGET AREA 1 SITES**

**PROPOSED NPL SITE**

**SAUGET AND CAHOKIA, ILLINOIS**

4/20/95

The purpose of this memorandum is to brief the Regional Decision Team on a State proposal to complete a site investigation and remedy selection for the Sauget Area 1 Sites. USEPA has made a recommendation that the Illinois Environmental Protection Agency (IEPA) be given both enforcement and technical lead at the Sauget Area 1 Sites.

**I. Background**

One of the most highly contaminated areas in Illinois are the Sauget Area 1 Sites. They comprise twelve sites that had allegedly received hazardous materials/wastes from local industries beginning around the turn of the century and continuing until 1990. The contaminants found at the Sauget Area 1 Sites consist mainly of chlorobenzenes, chlorophenols, chloroanilines, nitrophenols, nitroanilines, naphthalene, PCBs and PNAs. These sites were aggregated on the basis of their relative proximity to each other, shared watershed, nearly identical contaminants, and a common property owner at many of the sites during the periods of disposal.

In an effort to place both the Sauget Area 1 and Area 2 sites on the NPL, the State spent nearly \$1.3 million of its own funds to support HRS scoring packages for both areas. Approximately \$700,000 was spent on the Area 1 sites from 1986 to 1988. Funds that were spent on Area 1 were mainly focused on source area data collection.

As our site database was enhanced by this action, the State identified potential PRPs and allowed them the opportunity to perform an RI/FS under a State Consent Decree without having to resort to an NPL listing. Although no agreement for a PRP lead RI/FS was reached, the State signed a Consent Decree with Cerro Copper in Federal Court to investigate and remove contaminants from the most contaminated segment of Dead Creek at the cost of \$14 million. In addition, the State entered into a Consent Order with

Monsanto to perform an RI/FS at one of the Area II sites.

## **II. Current Status**

The RDT accepted a proposal from the Site Assessment Team in January of 1994 to take an "enforcement first" strategy. This entailed a USEPA-lead enforcement effort to gather and evaluate PRP evidence that would hopefully bring on negotiations leading to a PRP-lead investigation of Area 1. The State agreed to assist USEPA through an Enforcement Assistance CA and has been very helpful in building a potential enforcement case. The case initially focused on an Area I enforcement initiative that later became absorbed in negotiations with Monsanto over a proposed remedy at one of the sites ("Site G"). Technical consensus between IEPA and USEPA on a remedy proposed by Monsanto was not reached and a counterproposal to perform an interim remedy was rejected by Monsanto. USEPA's removal program is now performing an interim action at the site and PRP evidence at this site is being evaluated.

USEPA has since made the recommendation that the State be given both enforcement and technical lead at the Sauget Area 1 Sites.

## **III. Recommended Measures**

It has been the State's experience in attempting to gain meaningful commitments from potential PRPs that to perform any work (whether investigatory or cleanups), the evidence linking them to a specific site must be present and very substantial. Given what PRP investigatory work has been performed so far, there still appears to be a considerable lack of documentation concerning disposal activities and the parties associated with them. It is likely that such documentation does not exist.

The schedule outlined in the last RDT proposal called for the use of enforcement and negotiation to solicit PRP involvement in an Area 1 RI/FS. Since the basis of PRP association has not yet been fully defined, IEPA proposes a fund lead, focused RI/FS. This study would supplement existing source data with a groundwater investigation, risk/ecological assessment and FS. Throughout the investigation, enforcement evidence will be obtained to support a

cost recovery case and negotiation process with identified PRPs. This evidence will be gathered by investigating actual landfilled waste products, containers, process equipment, etc. at each of the landfills.

At Site G, PRP evidence has been dug up from the landfill during USEPA's removal activities. The result of this new evidence improves the chances of recovering USEPA's costs and affords an opportunity for a PRP group to perform an EE/CA at Site G which otherwise may not have been taken seriously without this evidence. The approach at Site G utilizing fund money to obtain PRP evidence for cost recovery is consistent with IEPA's proposal to utilize fund money for cost recovery and obtain enforcement leverage to broker PRP-financed remedies after a focused RI/FS is complete.

The cost of this focused RI/FS would be approximately \$2 million and could be completed in about two years. Details of this study are noted on the attachment.

### Sauget Area 1 Sites

#### IEPA Lead Enforcement/IEPA Technical Lead

#### Site G: EE/CA at Site G - Source/Groundwater Evaluation

\* IEPA proposes EE/CA for Monsanto, Cerro Copper and Wiese Engineering to perform with or without a binding State Consent Decree. The IAGO said that a model patterned after the Cerro Copper Decree could be prepared by late May of this year. If PRPs refuse, fund money from USEPA would pay for a focused RI/FS and remedy at Site G. The remedy could be implemented at the end of the EE/CA or focused RI/FS or deferred until after investigations at other sites are complete. Same options would be offered if IEPA doesn't agree with PRPs' proposed remedy. The EE/CA, if performed, would focus on evaluating existing site data, confirmatory soil borings (if necessary), and groundwater studies at Site G and the downgradient vicinity.

#### Sauget Area 1 Sites H,I,L,M,N,CS-A through CS-F: Focused RI/FS

\* PRPs noticed of potential liability. Work would proceed as fund

lead. IEPA would gather evidence of PRP liability as investigations proceed (e.g. procurement of PRP investigator). Orphan shares for sites where no financially viable PRPs are identified.

\* Objective of focused RI/FS would be to fill data gaps from IEPA/USEPA/Cerro/Monsanto investigations.

1. IEPA PRP Investigation

- a) Procure private PRP investigator (Orion?) to assist the IAGO in conducting witness interviews.
- b) Gather chemical process data to identify specific manufacturing processes as generators of waste products. It is anticipated that most of the information generated from this investigation will be physical evidence.
- c) Investigation will begin at start of RI/FS and continue throughout the process.

2. Data Validation/Evaluation

- a) IEPA/E&E ESI
- b) Cerro Copper SI (CS-A)
- c) Monsanto SI (CS-B)

3. Confirmatory Soil Borings/Surface Soil Sampling (if necessary)

4. Hydrogeologic Investigation

5. Contaminant Investigation

- a) Source Studies at CS-C through CS-F and Site N
- b) Area 1 Groundwater Contaminant Evaluation

6. Groundwater Modeling (focus on feasibility/infeasibility of groundwater extraction/treatment options)

7. Risk Assessment/Ecological Assessment

8. Feasibility Study (focus on probable groundwater/source remedies)

9. Treatability Studies (if necessary)

10. Remedy Selection

RDT SUMMARY #2 - SAUGET AREA 1 SITES  
PROPOSED NPL SITE  
SAUGET AND CAHOKIA, ILLINOIS

At the April 20, 1995 meeting, the Regional Decision Team (RDT) made a recommendation that a management plan be developed for both the Sauget Area 1 and Area 2 sites. The development of this plan entailed the formation of a "Sauget Sites Management Plan Development Group" that would be expanded from the original members of the Site Assessment Team to include additional State and Federal personnel. The RDT also agreed to provide \$750,000 in funding to support IEPA contractor assistance within this group. The preliminary objectives of this group are outlined below:

1. Establish which sites are higher priorities;
2. Develop an expanded PRP search to improve ORC's enforcement options;
3. Preliminarily identify data gaps which would later be filled by further site investigations;
4. Gain consensus on which range of remedies might be more appropriate to consider before performing an RI/FS;
5. Submit RI/FS scope to PRPs identified in expanded PRP search.

The first step in the formation of this group will be the appointment of a USEPA "facilitator". This facilitator will name members to the group and assist in the development of the group's preliminary objectives listed above. The RDT recommended that at minimum, the group also include the USGS and USEPA's water pollution program in addition to USEPA's members on the Site Assessment Team. IEPA recommended RCRA involvement with the group at the meeting. Additional recommendations on the State's representation in the group are forthcoming.

IEPA will make an application for a Cooperative Agreement with the USEPA to secure \$750,000 for the procurement of a contractor for technical assistance. At minimum, this technical assistance will

focus on fieldwork associated with the collection of physical evidence excavated from landfills, and the identification of site data needs and potential cleanup alternatives.